What is claimed is:

1. An isolated polynucleotide comprising a member selected from the group consisting of:

(a) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:1;

(b) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:2;

(c) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:3;

(d) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:4;

(e) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:5;

(f) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:6;

(g) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:7;

(h) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:8;

(i) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:9;

(j) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:43;

(k) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:44;

(l) a polynucleotide encoding the polypeptide comprising the amino acid sequence as set forth in SEQ ID NO:47;

(m) a polynucleotide capable of hybridizing to and which is at least about 95% identical to the polynucleotide of (a)-(k) or (l) wherein the encoded polypeptide is capable of binding to LDL; and

(n) a biologically active fragment of polynucleotide (a)-(l) or (m) wherein the encoded polypeptide is capable of binding to LDL.

2. The isolated polynucleotide of claim 1 wherein said member is selected from the group consisting of:

(a) a polynucleotide encoding the polypeptide comprising the amino acid residues 329-343 (SEQ ID NO:19), 329-354 (SEQ ID NO:20), 344-354 (SEQ ID NO:21) or 529-538 (SEQ ID NO:22) of the amino acid sequence as set forth in SEQ ID NO:43;

(b) a polynucleotide encoding the polypeptide comprising the amino acid residues 14-43 (SEQ ID NO:23) or 38-43 (SEQ ID NO:24) of the amino acid sequence as set forth in SEQ ID NO:1 and SEQ ID NO:6;

(c) a polynucleotide encoding the polypeptide comprising the amino acid residues 338-353 (SEQ ID NO:25), 338-365 (SEQ ID NO:26), 354-365 (SEQ ID NO:27) or 444-453 (SEQ ID NO:28) of the amino acid sequence as set forth in SEQ ID NO:47;

(d) a polynucleotide encoding the polypeptide comprising the amino acid residues 96-110 (SEQ ID NO:29) of the amino acid sequence as set forth in SEQ ID NO:5;

(e) a polynucleotide encoding the polypeptide comprising the amino acid residues 69-75 (SEQ ID NO:41) of the amino acid sequence as set forth in SEQ ID NO: 44;

(f) a polynucleotide capable of hybridizing to and which is at least about 95%identical to the polynucleotide of (a)-(d) or (e) wherein the encoded polypeptide is capable of binding to LDL; and

(g) a biologically active fragment of polynucleotide (a)-(e) or (f) wherein the encoded polypeptide is capable of binding to LDL.

3. The polynucleotide of claim 1 wherein said polynucleotide comprises the nucleic acid as set forth in SEQ ID NO:10.

4. The polynucleotide of claim 1 wherein said polynucleotide comprises the nucleic acid as set forth in SEQ ID NO:48.

5. The polynucleotide of claim 1 wherein said polynucleotide comprises the nucleic acid as set forth in SEQ ID NO:14.

6. The polynucleotide of claim 1 wherein said polynucleotide comprises the nucleic acid as set forth in SEQ ID NO:15.

7. The polynucleotide of claim 1 wherein said polynucleotide comprises the nucleic acid as set forth in SEQ ID NO:45.

8. The polynucleotide of claim 1 wherein said polynucleotide comprises the nucleic acid as set forth in SEQ ID NO:46.

9. The polynucleotide of claim 1 wherein said polynucleotide is genomic DNA.

10. A recombinant vector comprising said polynucleotide of claim 1.

11. A cell comprising said recombinant vector of claim 10.

12. A method for producing an LDL binding protein comprising culturing a cell of claim 11 under conditions that permit expression of said LDL binding protein.

13. An isolated polypeptide comprising a member selected from the group consisting of:

(a) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:l;

(b) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:2;

(c) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:3;

(d) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:4;

(e) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:5;

(f) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:6;

(g) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:7;

(h) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:8;

(i) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:9;

(j) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:43;

(k) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:44;

(l) a polypeptide having the amino acid sequence as set forth in SEQ ID NO:47;

(m) a polypeptide which is at least about 95% identical to the polypeptide of (a)-(k) or (l) wherein said polypeptide is capable of binding to LDL; and

(n) a biologically active fragment of polypeptide (a)-(l) or (m) wherein said fragment is capable of binding to LDL.

14. The isolated polypeptide of claim 13 wherein said member is selected from the group consisting of:

(a) a polypeptide having the amino acid residues 329-343 (SEQ ID NO:19), 329-354 (SEQ ID NO:20), 344-354 (SEQ ID NO:21) or 529-538 (SEQ ID NO:22) of the amino acid sequence as set forth in SEQ ID NO: 43;

(b) a polypeptide having the amino acid residues 14-43 (SEQ ID NO:23) or 38-43 (SEQ ID NO:24) of the amino acid sequence as set forth in SEQ ID NO: 1 and SEQ ID NO:6;

(c) a polypeptide having the amino acid residues 338-353 (SEQ ID NO:25), 338-365 (SEQ ID NO:26), 354-365 (SEQ ID NO:27) or 444-453 (SEQ ID NO:28) of the amino acid sequence as set forth in SEQ ID NO:47;

(d) a polypeptide having the amino acid residues 96-110 (SEQ ID NO:29) of the amino acid sequence as set forth in SEQ ID NO:5;

(e) a polypeptide having the amino acid residues 69-75 (SEQ ID NO:41) of the amino acid sequence as set forth in SEQ ID NO:44;

(f) a polypeptide which is at least about 95% identical to the polypeptide of (a)-(d) or (e) wherein said polypeptide is capable of binding to LDL; and

(g) a biologically active fragment of polypeptide (a)-(e) or (f) wherein said fragment is capable of binding to LDL.

15. A method for determining if an animal is at risk for atherosclerosis, comprising:

providing an animal; and

evaluating an aspect of LBP metabolism or structure in said animal, an abnormality in said aspect of LBP metabolism or structure being diagnostic of being at risk for atherosclerosis.

16. The method of claim 15 wherein said LBP is selected from the group consisting of LBP-1, LBP-2 and LBP-3.

17. A method for evaluating an agent for use in treating atherosclerosis, comprising:

providing a test cell, cell-free system or animal;

providing an agent;

administering said agent to said test cell, cell-free system or animal in a therapeutically effective amount; and

evaluating the effect of said agent on an aspect of LBP metabolism or structure, a change in said aspect of LBP metabolism or structure being indicative of the usefulness of said agent in treating atherosclerosis.

18. The method of claim 17 wherein said LBP is selected from the group consisting of LBP-1, LBP-2 and LBP-3.

19. The agent identified in claim 17.

20. A method for evaluating an agent for the ability to alter the binding of LBP polypeptide to a binding molecule, comprising:

providing an agent;

providing LBP polypeptide;

providing a binding molecule;

combining said agent, said LBP polypeptide and said binding molecule; and

detecting the formation of a complex comprising said LBP polypeptide and said binding molecule, an alteration in the formation of said complex in the presence of said agent as compared to in the absence of said agent being indicative of said agent altering the binding of said LBP binding molecule.

21. The method of claim 20 wherein said LBP polypeptide is selected from the group consisting of LBP-1, LBP-2 and LBP-3 polypeptide.

22. A method for evaluating an agent for the ability to bind to an LBP polypeptide, comprising:

providing an agent;

providing an LBP polypeptide;

contacting said agent with said LBP polypeptide; and

evaluating the ability of said agent to bind to said LBP polypeptide.

23. The agent identified in claim 22.

24. A method for evaluating an agent for the ability to bind to a nucleic acid

encoding an LBP regulatory sequence, comprising:

providing an agent;

providing a nucleic acid encoding an LBP regulatory sequence;

contacting said agent with said nucleic acid; and

evaluating the ability of said agent to bind to said nucleic acid.

25. The agent identified in claim 24.

26. A method for treating atherosclerosis in an animal, comprising:

providing an animal in need of treatment for atherosclerosis;

providing an agent capable of altering an aspect of LBP structure or metabolism;

administering said agent to said animal in a therapeutically effective amount such that treatment of said atherosclerosis occurs.

27. The method of claim 26 wherein said LBP is LBP-1, LBP-2 or LBP-3 polypeptide or a biologically active fragment or analog thereof.

28. A method for treating an animal at risk for atherosclerosis, comprising:

providing an animal at risk for atherosclerosis;

providing an agent capable of altering an aspect of LBP structure or metabolism; and

administering said agent to said animal in a therapeutically effective amount such that treatment of said animal occurs.

29. A method for treating a cell having an abnormality in structure or metabolism of LBP, comprising:

providing a cell having an abnormality in structure or metabolism of LBP;

providing an agent capable of altering an aspect of LBP structure or metabolism; and

administering said agent to said cell in a therapeutically effective amount such that treatment of said cell occurs.

30. A pharmaceutical composition for treating atherosclerosis in an animal, comprising:

a therapeutically effective amount of an agent, said agent being capable of altering an aspect of LBP metabolism or structure in said animal so as to result in treatment of said atherosclerosis; and

a pharmaceutically acceptable carrier.

31. The pharmaceutical composition of claim 30 wherein said agent is an LBP polypeptide or nucleic acid, or active fragment or analog thereof.

32. A vaccine composition for treating atherosclerosis in an animal, comprising:

a therapeutically effective amount of an agent, said agent being capable of altering an aspect of LBP metabolism or structure in said animal so as to result in treatment of said atherosclerosis; and

a pharmaceutically acceptable carrier.

33. A method for diagnosing atherosclerotic lesions in an animal, comprising:

providing an animal;

providing a labeled agent capable of binding to LBP present in atherosclerotic lesions;

administering said labeled agent to said animal under conditions which allow said labeled agent to interact with said LBP so as to result in labeled LBP; and

determining the localization or quantification of said labeled LBP by imaging so as to diagnose the presence of atherosclerotic lesions in said animal.

34. A method for immunizing an animal against an LBP or fragment or analog thereof, comprising:

providing an animal having LDL;

providing an LBP or fragment or analog thereof;

administering said LBP or fragment or analog thereof to said animal so as to stimulate antibody production by said animal to said LBP or fragment or analog thereof such that binding of said LBP to said LDL is altered.

35. A method of making a fragment or analog of LBP polypeptide, said fragment or analog having the ability to bind to modified LDL and native LDL, comprising:

providing an LBP polypeptide;

altering the sequence of said LBP polypeptide; and

testing said altered LBP polypeptide for the ability to bind to modified LDL and native LDL.

36. A method of treating a subject at risk for atherosclerosis, comprising providing a subject at risk for atherosclerosis and administering to the subject one or more of the following:

an LBP protein or fragment or analog thereof and an adjuvant;

a nucleic acid encoding an LBP protein;

a virus or bacteria comprising a nucleic acid encoding an LBP protein; and

an edible plant comprising a nucleic acid encoding an LBP protein.

37. A method of treating a subject at risk for atherosclerosis, comprising:

providing a subject at risk for atherosclerosis;

identifying one or more autologous LBP proteins produced by the subject;

administering to the subject an non-autologous LBP protein, wherein the non-autologous LBP protein induces an immune response against one or more autologous LBP proteins when administered to the subject.